

## CLAIMS:

1. High pressure sodium lamp having a nominal power  $Pl_a$ , which is suitable to be operated at a very high frequency (VHF), having a discharge tube with a ceramic wall and an internal vessel diameter  $D_{int}$ , enclosing a discharge space in which a pair of electrodes at a mutual electrode distance  $ed$  and a filling of Na-amalgam with a sodium mol fraction (smf),  
5 characterized in that the discharge tube has a ratio  $ed/D_{int}$  between about 5.5 and 4.0.
2. Lamp according to claim 1, characterized in that the wall thickness (wt) is  $0.4 \leq wt \leq 0.6$  mm.
- 10 3. Lamp according to claim 1 or 2, characterized in that the lamp has a wall load of at most  $30 \text{ W/cm}^2$ .
4. Lamp according to claim 1, 2 or 3, characterized in that:
  - $0.2 \leq ed/Pl_a \leq 0.35$ ;
  - 15 - an amalgam composition with  $0.6 < smf < 0.75$ ;
  - the ratio internal discharge vessel diameter  $D_{int}$  to the nominal lamp power  $Pl_a$  is  $0.045 \leq D_{int}/Pl_a \leq 0.08$ ;
  - the wall thickness (wt) is  $0.4 \leq wt \leq 0.6$  mm.
- 20 5. Lamp according to claim 1, 2, 3 or 4, characterized in that the filling also comprises Xe having a pressure at room temperature in the range of  $400 \text{ mbar} \leq p_{Xe} \leq 1000 \text{ mbar}$ .
- 25 6. Lamp according to claim 1, 2, 3, 4 or 5, characterized in that the electrodes are provided with emitter and that each of the electrodes has an electrode diameter, which specified relatively to the average lamp current ( $I_{la}$ ) at nominal lamp power fulfills the relation:  $0.2 < (D_{electrode})^2/I_{la} < 0.45$ , preferably  $0.25 < (D_{electrode})^2/I_{la} < 0.35$ .

7. Lamp according to claim 1, 2, 3, 4, 5 or 6, characterized in that the lamp emits light in nominal operating condition with a color temperature  $T_C$  of at most 2500K.

8. A lighting system comprising a full electronic VHF driver for operating a lamp according to any of the claims 1 to 7.

9. A system according to claim 8, wherein the VHF ballast is provided with resonant ignition means by which resonant ignition is applied on igniting the lamp.